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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,965	12/09/2003	Ari Minkkinen	612.43291X00	2197

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EXAMINER	
JOHNSON, EDWARD M	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/729,965	MINKKINEN ET AL.	
	Examiner	Art Unit	
	Edward M. Johnson	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 17-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No support was found for the specific requirement that the first and second solvents be different or have different concentrations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pounds et al. US 5,462,721.

Regarding claim 1, Pounds '721 discloses a process for removing hydrogen sulfide from natural gas comprising contacting with amine to produce a steam depleted of hydrogen sulfide (abstract, background).

Pounds fails to disclose contacting the thus depleted stream again with amine to remove water.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to repeat the disclosed amine contacting on the depleted stream because Pounds discloses that since hydrogen sulfide is corrosive in the presence of water and poisonous in very small concentrations, it must be removed from natural gas streams "before use" (see column 1, lines 45-50), which would obviously, to one of ordinary skill, at least motivate contacting again to remove water from the natural gas after the hydrogen sulfide has been removed but "before use" of the natural gas, as disclosed.

Regarding claims 17-20, it would have been obvious to select an optimum amount of amine in either step including at least two different solutions having 20-98% by weight because

Pounds discloses a single circuit any concentration and about 85% (see abstract and column 6, lines 18-20).

Regarding claims 2 and 8, Pounds discloses a single circuit any concentration and about 85% (see abstract and column 6, lines 18-20).

Regarding claims 3-7, 9-14, Pounds discloses heating to below about 150 degrees (see column 6, lines 21-26), which would at least suggest distilling or expanding before the suggested second contact. Pounds further discloses the known regeneration of the compounds (see paragraph bridging columns 1-2).

Regarding claim 15, Pounds discloses pumping (see Example 1).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pounds '721 as applied to claim 1 above, and further in view of Grierson et al. US 5,622,681.

Pounds fails to disclose methyldiethanolamine or dimethylethanolamine.

Grierson discloses methyldiethanolamine (see column 7, line 4).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the methyldiethanolamine of Grierson in the hydrogen sulfide removal process of Pounds because Grierson discloses the

methyldiethanolamine in a process for removal of hydrogen sulfide from natural gas to scrub or "sweeten" refinery and natural gas streams (see abstract and paragraph bridging columns 6-7).

Response to Arguments

6. Applicant's arguments filed 4/24/06 have been fully considered but they are not persuasive.

It is argued that the Pounds et al. patent discloses a hydrogen sulfide scavenging process. This is not persuasive because Applicant appears to admit that a mixture of such reactants is disclosed, Applicant merely claims contacting with a solvent comprising amine, and Pounds discloses "amine products" (see columns 5-6). And, in any case, no such 100% reaction resulting in zero amines present is disclosed, nor does Applicant appear to allege that the disclosed products are in fact different and contain no amines, arguing only that the mixture is referred to as a reaction product.

It is argued that a first difference between the present invention... dialdehyde and an alkanolamine. This is not persuasive for the reasons above.

It is argued that the scavenging compounds are prepared... and (2) and aledhyde. This is not persuasive for the reasons above.

It is argued that it appears from the Examiner's comments... may contain some unreacted amines. This is not persuasive because Applicant appears to admit that the amines may be "unreacted" and it would have been obvious to select an optimum amount of amine in either step including 20-95% by weight because Pounds discloses a single circuit any concentration and about 85% (see abstract and column 6, lines 18-20). It is also further noted that Applicant does not allege that the product contains no amines, or is not itself an amine, as the nitrogen atoms do not appear to be removed from the resulting solution of amines and dialdehyde of the prior art.

It is argued that a second difference between the present invention... different from the first solvent. This is not persuasive because Applicant appears to admit that the amines may be unreacted and, in any case, it would have been obvious to select an optimum amount of amine in either step including at least two different solutions having 20-98% by weight because Pounds discloses a single circuit any concentration and about 85% (see abstract and column 6, lines 18-20).

It is argued that the Pounds et al. patent contains no... 90% by weight of amine. This is not persusive because Pounds discloses a single circuit any concentration and about 85% (see abstract and column 6, lines 18-20).

It is argued that firstly, the sentence concerns only… of natural gas. This is not persuasive because Applicant appears to merely point out the reason a §103 rejection was made, since if such specific disclosure were made, the rejection may have been under §102. However, Pounds discloses that since hydrogen sulfide is corrosive in the presence of water and poisonous in very small concentrations, it must be removed from natural gas streams "before use" (see column 1, lines 45-50), which would obviously, to one of ordinary skill, at least motivate contacting again to remove water from the natural gas after the hydrogen sulfide has been removed but "before use" of the natural gas, as disclosed.

It is argued that secondly, the Examiner does not discuss… at least 90% by weight of amine. This is not persuasive because Pounds discloses a single circuit any concentration and about 85% (see abstract and column 6, lines 18-20).

It is argued that moreover, with respect to claims 3-15… the scavenging compounds. This is not persuasive because distilling would regenerate and Pounds discloses heating to below about 150 degrees (see column 6, lines 21-26), which would at least suggest distilling or expanding before the suggested second contact. Pounds further discloses the known regeneration of the compounds (see paragraph bridging columns 1-2).

It is argued that the Grierson et al. patent discloses... gas absorption process. This is not persuasive because Applicant appears to admit that an alkanolamine is disclosed and Grierson is relied upon for methyldiethanolamine (see column 7, line 4), and not Applicant's alleged deficiencies of Pounds. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated

from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Edward M. Johnson
Primary Examiner
Art Unit 1754

EMJ